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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/035,293	01/04/2002	Ermanno Filippi	Q67865	1913
7590 12/06/2004 SUGHRUE MION, PLLC 2100 Pennsylvania Avenue, NW Washington, DC 20037-3213			EXAMINER BHAT, NINA NMN	
			ART UNIT 1764	PAPER NUMBER
DATE MAILED: 12/06/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/035,293

Applicant(s)

FILIPPI ET AL.

Examiner

N. Bhat

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 1-4-02.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 9-18 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-10 of copending Application No. 09/852,014 (now allowed). Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications claim a reactor for carrying out exothermic or endothermic heterogeneous reactions which includes an outer shell of cylindrical shape and at least a heat exchanger embedded in a catalytic layer supported in the shell and wherein the heat exchanger is a plate type heat exchange. Both applications provide a reactor which includes a substantially cylindrical shell, closed at its opposed ends by respective bottoms and includes a reaction zone within the shell in order to contain a catalytic bed of which is synonymous to applicant's catalytic layer in the '014 application with respect to applicant's recitation of a manhole and that the heat exchange comprises at least two modular assembled heat exchangers, the manhole is an obvious expedient catalytic

reactors there needs to be means to access the reactor, clean the reactor, remove the catalyst and remove the heat exchanging elements if fouling were to occur which does occur over time and to provide a manhole would have therefore been obvious with respect to the specific details of the heat exchanger the claims in the '014 application are broad enough to encompass the heat exchanger comprising at least one heat exchange element as claimed and therefore the claims as drafted would not preclude providing at least two modular and assembled heat exchangers comprising at least one heat exchanger plate or element.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

3. Claims 9-18 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-12 of copending Application No. 10/275,772. Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications claims a reactor for carrying out exothermic or endothermic heterogeneous reactions comprising an outer shell of substantially cylindrical shape and at least one heat exchanger embedded in a catalytic layer supported in a shell and the heat exchanger is a plate type heat exchanger. The '722 claims are slightly broader in scope than the claims in the instant application and the difference is that there is more detail in the claims as to how the metal heat exchange plates are anchored and fixed in the reactor. Both inventions claim that the heat exchanges are arranged radially in the catalytic layer and that instead of claiming a "manhole" as claimed in the instant application, the '722

claims an "aperture" which are functionally equivalent. With respect to the specific attachment of the heat exchanger plates to the reactor using welding spots as claimed in the instant application; the attachment means of spot welding would have been obvious where basic anchoring has or securing has been taught because the anchoring technique employed would have been obvious to one familiar with reactor design manufacturing. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

4. Claims 1-8 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-11 of copending Application No. 10/407,598. Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications claim a heat exchange for axial and radial pseudo-isothermal reactors which comprise a substantially cylindrical shell closed at its opposite ends by respective bottoms, the instant application is broader in scope than claimed in the '598 application but would obviously encompass the claimed subject matter of the '598 and to provide the heat exchange unit with the different arrangement as claimed in the '598 would have been an obvious modification of the heat exchange arrangement of the instant application absent criticality in showing.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

5. With properly executed and timely filed Terminal Disclaimers this application would be in condition for allowance as the prior art fails to teach and or suggest the pseudo-isothermal reactor and heat exchange units as claimed.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Muenger '547 teaches a heat exchanger apparatus for an exothermic catalytic system comprising a closed cylindrical vessel wherein two separate heat exchanges are embedded in the catalyst within the cylindrical vessel and are supported by the axial spine. The reactor provides for an adiabatic section and isothermal section thus being pseudo-isothermal. However in contradistinction to the instant claims the reactor of Muenger '547 does not provide at least two modular and assembled heat exchangers having predetermined cross dimension smaller than those of the manhole opening and the heat exchanger comprising at least one heat exchange plate element. Koves teaches an isothermal reactor which uses interleaved layers of plate heat exchange elements to improve heat transfer in a radial flow arrangement. The heat exchanger elements of Koves are not embedded in the catalyst as claimed. Filippi et al. teach a method for carrying out chemical reactions in pseudo isothermal conditions comprising a catalytic cartridge for heterogeneous chemical reactors comprising a substantially cylindrical based for containing a predefined catalyst and made of a plurality of containers that are structurally independent from each other. Filippi et al. 10/013,662 teach an isothermal reactor for carrying out heterogeneous exothermic or endothermic reactions comprising within a catalytic bed housed in an appropriate outer shell at least one tube for the passage of cooling or heating fluid which

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extends with a cone shape helicoidally. Sioli teach a process and reactor for heterogeneous exothermic synthesis of formaldehyde. EP 0 386 693 teach a process and reactor for exothermic heterogeneous synthesis with several catalyst beds and heat exchange.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to N. Bhat whose telephone number is 571-272-1397. The examiner can normally be reached on Monday-Friday, 9:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



N. Bhat  
Primary Examiner  
Art Unit 1764